



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Title

: Motor Operated Fast Food Service Window with Upwardly Focused Proximity Detectors

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Serial No.: 09/004,803 § Examiner : Strimbu, G.

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CERTIFICATE OF MAILING (37 C.F.R. 1.10)

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John R. Merkling
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37 C.F.R. 1.132 DECLARATION OF JACKSON G. WEAVER

I, Jackson G. Weaver, declare that:

1. I am a citizen of Harris County, in the state of Texas in the United States of America, and I reside at 12511 Lakecrest Circle, Cypress, TX 77429.
2. Since approximately December 1989 I have been, and am currently, employed by M.C.E. Systems Corporation, now known as Quikserv Corporation.
3. My current position is production manager.
4. In 1990 I helped manufacture a fast food service window with proximity sensors at M.C.E. Systems Corporation (Quikserv).
5. Relying on the example of doors using proximity sensors, we used a sensor that was directed to sense the torso of a person approaching the window, like the sensors shown in Jonsson, US Patent 4,560,912. The sensors in Jonsson are aimed to sense the torso of a person approaching a door.

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6. We found that sensors directed to detect the body or torso of a person were not satisfactory. The area around a fast food service window is a "noisy" environment. That is, there are many false signals in the area. Unlike a door, the employee stays in the general area of the window, taking orders, getting food items and performing other tasks. Proximity sensors aimed to sense the torso of the employee opened the widow at undesirable times.
7. Two units with outward, horizontally directed sensors were installed in restaurants in Utah. We continued to experience over-sensing problems with this type of unit. Only about 15 to 20 units of this type were made by Applicant.
8. We found that the range of the horizontally directed sensors cannot be set sufficiently accurately for this environment. A light-emitting proximity sensor is sensitive not only to the distance of an approaching person, but also to the color of a reflecting surface. A person wearing a light shirt or light pants is detected sooner and more frequently than a person wearing dark clothing. Sensors directed to detect the torso of an employee (horizontally directed sensors) therefore respond differently to different stimulations. If the sensitivity of the sensor is diminished, to avoid oversensing, employees in dark clothing may be undersensed or not sensed at all. If the sensitivity of the sensor is increased, employees in light clothing may trigger false openings even when not working at the window.
9. Our next attempt to use a light source in a service window comprised a side-to-side or through beam installation. In this configuration, a beam of light is directed from one side of a window across the bottom edge of the widow into a receiver at the other side of the window. An employee would open the window by interposing a part of the employee's torso in the light beam. The configuration requires that the employee move his or her body very close to the window and is still overly sensitive.
10. We also used light-sensing in a side-to-side emitter-mirror configuration. In this configuration, a mirror replaced the receiver on the second side of the window. Both the emitter and the receiver were located in a single unit

on one side of the window. The emitter-mirror configuration was even more sensitive than the side-to-side configuration because the mirror jiggled when the window was bumped and was easily misaligned.

11. I am familiar with proximity sensor-operated service windows from Reltec Equipment Inc. These windows have been offered for sale since at least 1989. The Reltec windows were an attempt to use optical proximity sensing in service windows. They featured horizontally directed sensors that detected the torso of the employee, just as the Jonsson sensors do. Wendy's was a customer of Reltec. Windows with upwardly directed sensors have replaced the older technology at Wendy's since these windows have become available from Quikserv.
12. Another attempt by the industry to use proximity sensors in service windows were windows offered by Horton Automatic and by Ready Access from at least 1989. These windows featured downwardly directed sensors mounted above the service window. These sensors still detect the torso of the employee when the employee approaches the window.
13. One of the users of the downward sensor windows was What-a-Burger Fast Food. What-a-Burger was dissatisfied with the performance of the downward sensor windows and requested an improvement. Horton did not provide the improvement, and What-a-Burger approached Quikserv in 1997. In response to this request, the inventors developed the service window with upwardly-pointing sensors focused upward at an angle that deviates from a vertical direction by not more than 10°. The sensors are directed into a region where the torso of the employee is not sensed.
14. This new technology has supplanted service windows with both downward and outwardly directed sensors.
15. I am familiar with the level of ordinary skill in the art of service window design. I have reviewed the Applicant's application for a patent and the Jonsson '912 patent.
16. A person of ordinary skill in the art would have used a door-opening proximity sensor to control a service window by aiming that sensor into an area where the torso of an employee would be sensed, rather than to sense extended arms of the employee as the employee reaches towards

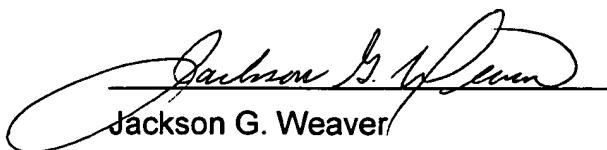
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the window. This was done by each of the companies offering proximity sensing service windows, including Quikserv and Quikserv's competitors. In every instance known to me, the proximity sensors were directed into an area where the torso of the employee would be sensed.

17. The Jonsson '912 patent also teaches that proximity sensors should be directed into an area where the torso of a person approaching a door would be detected. It would not teach a person of ordinary skill in the art to point the sensors upward at an angle that deviates from a vertical direction by not more than 10° to sense the extended arms of an employee.

18. Persons of skill in the art of service window design used proximity sensors with service windows before this invention, but did not direct the sensors upwardly to detect the arms of the employee. Since we did not realize (before this invention) that proximity sensors should be pointed up, there was no reason to optimize configuration of upwardly pointed sensors.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.



Jackson G. Weaver

3/20/2001
Date